



## Research Article

Volume-05|Issue-05|2025

## Financial Aspects Related to the Activity of Dairy Cattle Farms in Bulgaria – A Survey

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## Article History

Received: 22.09.2025

Accepted: 27.10.2025

Published: 31.10.2025

## Citation

Stoev, S., Miteva, C., Mitev, E. (2025). Financial Aspects Related to the Activity of Dairy Cattle Farms in Bulgaria – A Survey. *Indiana Journal of Agriculture and Life Sciences*, 5(5), 16-20.

**Abstract:** The aim of this study is to learn more about financial conditions from the beginning of farmer's activity till nowadays, about farmer's attitude of using different financial instruments, what are their problems and expectations. To carry out these studies, a survey was prepared and carried out with dairy farmers, owners of dairy farms of different capacities, from all over the country, including questions related to their activities. At the time of the survey the owners of all farms use the income from the sale of the production to finance their activities. Owners of small farms (up to 49 cows) are less likely to afford bank loans (25%), unlike large farms (over 101 cows) – 80%. There is good knowledge of the conditions for financing agricultural production by farmers with large farm capacity – 85%. There are no farmers among them who are not familiar with these conditions at all, and 15% believe that they are not well enough acquainted. The largest share of farmers who are not familiar with the conditions for financing is in the group of farms with the smallest capacity – 27.5%. This group also has the smallest share of those who are familiar with them – 32.5%.

**Keywords:** Survey, dairy farmers, attitudes, financial aspects

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## INTRODUCTION

The development of dairy cattle in the world has achieved extraordinary progress, which is due to the achievements in population genetics, selection, embryo transfer, computerization, feeding systems, milking techniques, modern management, nutrition, innovative technologies (Bianchi *et al.*, 2022; Eurostat, 2020; Liu *et al.*, 2023). In the last years significant changes are observed in the ratio of farms with different capacities and the number of animals kept in them. Considerable number of modern dairy farms with large capacity have been built in our country. They are a serious prerequisite for the introduction of innovations and precise management tools in this sector (Koutouzidou, 2022; Popova *et al.*, 2024).

Most often, discussions of problems and trends in dairy cattle breeding are focused on one part of the sector - animals and milk production. Very rarely do analyzes and statistics relate to the other, much more essential part of this process - the people involved in this production - the farmers (Harrison, 2006; Wolf *et al.*, 2014; Adler *et al.*, 2019).

The financial performance of dairy farms has changed significantly in recent decades. Relative stability is observed, based on the availability of long-term assets. With changes in global financial policy, due to the introduction of various policy instruments, liquidity thresholds increase, and the possibility of

smoothly covering loan obligations decreases (Wolf & Karszes, 2023; Karszes & Augello, 2021).

Stress testing financial risk-bearing actions against safety thresholds indicates whether the farmer should and can use certain risk management tools (Kelly *et al.*, 2020; Ramsbottom *et al.*, 2021).

The aim of this study is to learn more about financial conditions from the beginning of farmer's activity till nowadays, about farmer's attitude of using different financial instruments, what are their problems and expectations.

## MATERIALS AND METHODS

To carry out these studies, a survey was prepared and carried out with dairy farmers, owners of dairy farms of different capacities, from all over the country, including questions related to their activities.

The survey was conducted in the period 2019 - 2022 and included a total of 120 owners of dairy farms from different regions of the country. For the purposes of the analysis, the farms included in the survey are divided into three groups depending on their capacity at the time of the survey, respectively: I<sup>st</sup> - up to 49 cows; II<sup>nd</sup> - from 50 to 100 cows and III<sup>rd</sup> - over 101 cows. 40 farmers were interviewed in each group.

The questions for the survey of financial aspect is a part of total 150 questions related to various

organizational, economic, production, socio-political, social, etc. problems concerning Bulgarian agriculture and more specifically dairy farming.

For basic statistical processing of the data and preparation of the graphs, the MS Excel program package was used, and for obtaining the average values, errors and variation in relation to the studied indicators, the relevant STATISTICA modules of StatSoft (Copyright 1990-1995 Microsoft Corp.) were used.

The results of the survey are summarized in separate sections corresponding to the survey questions.

Table 1. Percentage (number) of farmers who used different sources of financing at the beginning of the activity, by groups with different farm capacity

Group	Family resources			Total family	Loans from private individuals	Bank loans
	From salaries	Inheritance	From additional activities			
Up to 49 cows	80%(32)	32,5%(13)	65%(26)	92,5%(37)	32,5%(13)	20%(8)
From 50 to 100	82,5%(33)	5%(2)	65%(26)	90 %(26)	40%(16)	32,5%(13)
Over 101 cows	65%(26)	25% (10)	57,5%(23)	87,5%(35)	22,5%(9)	77,5%(31)

Of the farms with a capacity of up to 49 cows, 80% of the farmers used funds from salaries, 32.5% used funds from inheritance and 65% from additional activities, with 83.8% of them being financed from two or three family sources. Of all the farmers in this group, 92.5% used various family funds in total to start the business, only 3 farmers (7.5%) from this group did not use any family funds to start the business. 32.5% used loans from private individuals, of which only 1 did not use family funds, the rest also used family funds. Only 20% of this group used bank loans to start their business. Of these, only 2 relied mainly on the loan, without using family and other funds. 50% of this group of farmers (up to 49 cows) relied entirely on family funds - from salaries, inheritances and other activities to start production, 5% (2) only on bank loans and 2.5% (1) only on loans from private individuals. The remaining 42.5% (17) used various combinations of financing sources - two or more, to start their business.

Of the farmers with a farm capacity of 50 to 100 cows, 90% used various family funds to start their business, only 10% (4) did not use any family funds. Of all farmers, 82.5% used funds from salaries, 65% funds from other additional activities and only 5% from various inheritances. Only 5 used only funds from family salaries, the rest used more than one family source for financing. 40% (16) of the total number of farmers from this group used loans from private individuals to start their business. The majority of them (13) used both family funds and 3 used a bank loan.

A total of 32.5% (13) farmers from the group of 50 to 100 cows used bank loans. Of these, 4 used only this source to finance the start of their business. The rest

## RESULTS AND DISCUSSION

### Sources of financing used at the start of the activity

Table 1 presents the percentage, and in brackets the number of farmers, depending on the financial means used to start their activity by group of farms, depending on their capacity.

In total, farmers used family financial resources, loans from private individuals and bank loans do not form 100%, since a large part of them used more than one source of financing.

also used various family funds, with 3 also using loans from private individuals. Of the farms with over 101 cows, 65% used funds from salaries to start the business, 25% from inheritances and 57.5% from additional other activities, with 22.8% of them using more than one family source for financing. Of the total number of farmers in this group, 10% (5) did not use family funds to start their business. 22.5% used loans from private individuals, with only 1 of them not using family funds. 6 of those who used loans from private individuals also used bank loans. 77.5% used bank loans to finance their production. Of these, only 4 did not use family funds.

Of the total number of farms in the group with over 101 cows, only 12.5% (5) used only family funds, of which 7.5% (3) relied only on family funds (from salaries and other activities) and 2.5% (1) on family and inheritance. Only 5% (2) relied entirely on bank loans and 2.5% (1) on loans from private individuals, all the others used two or more sources to finance their activities.

From the analysis of the sources of financing at the beginning of the activity for the three groups of farms, it can be summarized that there is a trend for a lower percentage of farmers from the third group using various family funds, respectively 87.5%, against 92.5% for farmers from the first group. For the third group, the smallest share of farmers used loans from private individuals – 22.5%, and the highest share of those who used bank loans – 77%. In the group of farmers with small farm capacity, family funds (92.5%), loans from private individuals and the smallest percentage of bank loans were used - only 20%.

**Sources of financing used at the present time**

At the time of the survey, the options for the specified financial means to ensure production are different from those at the start of the activity. The sources include: sale of own production, sale or lease of land and other property, bank loans, loans from private individuals and other activities. Other activities include various sources of financing that cannot be classified into groups.

Table 2. presents the percentage and in brackets the number of farmers who used the various financial sources by groups of farms by capacity. The analysis is again presented by groups, as follows: Up to 49 cows - All farmers in this group use the income from the sale of their own production to ensure their current production, but only 35% (14) of them rely only on this income. 17.5% (7) additionally use bank credit, 7.5% (3)

additionally use loans from private individuals, and 30% (12) combine the income from their own production with income from other activities. 10% (4) use more than two sources to ensure their current production.

From 50 to 100 cows - From this group, all farmers also use the income from their own production to ensure their current activity, of which only 25% (10) rely only on these funds. The rest use more than one source. Only two from this group use funds from renting out land and property. 30% (12) use, in addition to the income from their own production, funds from a bank loan, only 1 - from loans from private individuals, and 30% (12) - from additional activities. 10% (4) use more than two sources to ensure their current production - income from their own production, bank loans, rents and other activities.

Table 2. Percentage (number) of farmers by groups depending on the financial means used to ensure their production at the present time

Group	Sale of own production	Sale of land and other property	Rents from land, technics, etc.	Bank loan	Loans from private individuals	Other activities
Up to 49 cows	100% (40)	2,5%(1)	0	25%(10)	10%(4)	37,5%(15)
From 50 to 100	100% (40)	0	5%(2)	35%(16)	2,5%(1)	35%(16)
Over 101 cows	100% (40)	7,5%(3)	7,5%(3)	80%(32)	7,5%(3)	50%(20)

Over 101 cows - All of this group of farmers use funds from their own production to finance their current activity, but only 10% (4) rely entirely on these funds. All the others additionally use other sources of financing. In this group, the relatively largest share of farmers who have sold land and other property – 7.5% and rent out property – 7.5%.

This group of farmers has the highest percentage of those using bank loans – 80% and funds from other activities – 50% to finance their activity.

As a summary, it can be said that owners from all groups of farms use the income from the sale of their production to finance their activity. Owners of small farms (up to 49 cows) are less likely to afford bank loans

(25%) compared to large farms (over 120 cows) – 80%. Also, a majority of the owners of large farms (over 101 cows) have income from other activities (50% of farmers).

**Intentions to increase financial resources for production purposes in the near future and ways to achieve them**

Table 3 presents the percentage of farmers depending on their intentions to increase the financing of their activities and the ways in which they intend to achieve it, those who have such intentions. For farms with a capacity of up to 49 cows - Out of a total of 40 farmers in this group, 37.5% (15) have no intention of increasing their financial resources for production activities.

Table 3. Percentage (number) of farmers by groups depending on intentions to increase financial resources for production

Group	No intensions	With intensions		
		Bank loan	Financial support from family	Incomes from other activities
Up to 49 cows	37,5 %(15)	56%(14)	8% (2)	44%(11)
From 50 to 100	47,5% (19)	80,9%(17)	9,5%(2)	14,3%(3)
Over 101 cows	17,5% (7)	93,9% (31)	6 % (2)	30,3%(10)

Of the remaining 62.5% or 25 farmers, 56% intend to use bank credit for this purpose. The other almost half of them – 44% (11) intend to finance themselves from income from other activities. Only two farmers intend to use funds from their parents, and both will additionally use funds from a bank credit or from

other activities. 32% (8) will use two sources to expand their production, mainly bank credit and funds from other activities - 24% (6).

For farms with a capacity of 50 to 100 cows - From this group, a larger percentage of farmers – 47.5%,

do not intend to increase their production funds in the future. Of those who have such intentions, the main part – 80.9% intend to use bank credit for this purpose, 9.5% - a loan from their parents and 14.5% - funds from other activities. Only one farmer intends to use two sources to increase his finances – from parents and other activities.

For farms with a capacity of over 101 cows - Of this group of farmers, only 17.5% (7) have no intention of increasing their financial resources for production in the future. Of the rest, almost all – 83.5% – intend to use bank loans for this purpose, 30.3% (10) – funds from other activities and only 6% (2) – funds from parents, but in combination with funds from a bank loan. Only 6% (2) intend to use only funds from other activities, the rest, in addition to other activities, intend to use funds from bank loans – 24.2% (8).

Table 4. Percentage and number of farmers by groups, depending on their knowledge of the conditions for financing agricultural production in our country

Group	Familiar with the conditions	Not familiar	Partially familiar
Up to 49 cows	32,5% (13)	27,5%(11)	40%(16)
From 50 to 100	55%(22)	12,5% (5)	32,5% (13)
Over 101 cows	85% (34)	0	15% (6)

There is a clear trend towards good knowledge of the conditions for financing agricultural production by farmers with large farm capacity – 85%. There are no farmers who are not familiar with these conditions at all and 15% believe that they are not completely well informed. The largest share of farmers who are not familiar with the conditions for financing agricultural production in our country is in the group of farms with the smallest capacity – 27.5%. This group also has the smallest share of those who are familiar with them – 32.5%. All this corresponds to the preferences for using bank loans presented by groups by farmers from the three groups.

## CONCLUSIONS

Owners of all farm groups at the time of the survey use the income from the sale of the produced products to finance their activities. Owners of small farms (up to 49 cows) are less likely to afford bank loans (25%), unlike large farms (over 101 cows) – 80%.

There is good knowledge of the conditions for financing agricultural production by farmers with large farm capacity – 85%. There are no farmers among them who are not familiar with these conditions at all, and 15% believe that they are not well enough acquainted. The largest share of farmers who are not familiar with the conditions for financing agricultural production in our country is in the group of farms with the smallest capacity – 27.5%. This group also has the smallest share of those who are familiar with them – 32.5%.

In summary, the smallest share of farmers who do not intend to increase their financial resources in the future is from the third group. Farmers who have focused on using bank loans predominate in this group.

## How well do farmers know the conditions for financing agricultural production?

As was established from the previous point, a fairly large part of the surveyed farmers, a total of 34.2%, do not intend to increase the financing of their activities for one reason or another. Of the total number of farmers intending to expand the financing of their activities, 78.5% consider the purpose to use bank loans. Table 4 presents the percentage and number of farmers, depending on how familiar they are with the conditions for financing agricultural production in our country.

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